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Standard Specification for Serpentine Dimension Stone¹

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^{ε1} NOTE—Table 1 was editorially updated in October 2023.

1. Scope

1.1 This specification covers the material characteristics, physical requirements, and sampling appropriate for the selection of serpentine (serpentine marble) for general building and structural purposes. Refer to Guides C1242 and C1528 for the appropriate selection and use of serpentine dimension stone.

1.2 Dimension serpentine shall include stone that is sawed, cut, split, or otherwise finished or shaped and shall specifically exclude molded, cast, or otherwise artificially aggregated units composed of fragments, and also crushed and broken stone.

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

C97/C97M Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone

C99/C99M Test Method for Modulus of Rupture of Dimension Stone

C119 Terminology Relating to Dimension Stone

C170/C170M Test Method for Compressive Strength of Dimension Stone

C241/C241M Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic

C880/C880M Test Method for Flexural Strength of Dimension Stone

C1242 Guide for Selection, Design, and Installation of Dimension Stone Attachment Systems

¹ This specification is under the jurisdiction of ASTM Committee C18 on Dimension Stone and is the direct responsibility of Subcommittee C18.03 on Material Specifications.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

C1353 Test Method for Abrasion Resistance of Dimension Stone Subjected to Foot Traffic Using a Rotary Platform Abraser

C1528 Guide for Selection of Dimension Stone

3. Terminology

3.1 *Definitions*—All definitions are in accordance with Terminology C119.

4. Physical Properties

4.1 Serpentine supplied under this specification shall conform to the physical requirements prescribed in Table 1.

4.2 Serpentine shall be free of minerals that may cause objectionable staining under normal environments of use.

4.3 Warping of serpentine due to localized water absorption is a natural characteristic of the material and shall be taken into account in assessing the permissible natural variations suitable for a particular application. Setting serpentine with a non-water-based setting material in a full-coverage setting bed over a rigid substrate can prevent warping from occurring after installation.

4.4 Alteration of the color and finish of serpentine with exposure to the weather can occur and shall be taken into account in assessing the suitability of serpentine for a particular application. Alteration of serpentine, due to weather exposure, can result in whitish mineral deposits on the surface of the stone and can also result in a faded appearance and loss of polish.

4.5 The desired color and texture, with their permissible natural variations in material characteristics for material to be produced for the project, shall be established by control samples. Representative samples shall be selected prior to production by viewing a sufficient number of samples that show the complete range of variations in color and texture of the serpentine specified.

5. Sampling

5.1 Samples, if required, for testing to determine the characteristics and physical properties shall be representative of the serpentine to be used.